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MMC2/0813

EXAMINER

NGUYEN, T

ART UNIT

PAPER NUMBER

2832

DATE MAILED: 08/13/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No. 08/973,210	Applicant(s) Leijon
Examiner Tuyen T. Nguyen	Art Unit 2832



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on May 24, 2001

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-33 and 36-39 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-33 and 36-39 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on Apr 3, 1998 is/are objected to by the Examiner.

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) All b) Some* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) Notice of References Cited (PTO-892)

16) Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) Information Disclosure Statement(s) (PTO-1449) Paper No(s). 16

18) Interview Summary (PTO-413) Paper No(s). _____

19) Notice of Informal Patent Application (PTO-152)

20) Other: _____

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DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first and second plurality of strands and the transmission line must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 7, 8, 12, 25, 36 and 39 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant fails to disclose an adequate written description of a flexible cable, a first plurality of strands being insulated from each other and a second plurality of strands being un-insulated from each other in order to secure electric contact and the transmission line in the specification.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 5, 7, 10, 12, 16, 25, 31, 33, 36 and 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 5, 31 and 33, the term “substantially” is a relative term.

Regarding claims 7, 25 and 39, the structure of the flexible cable is unclear.

Regarding claim 12, the specific structure of the first plurality of strands being insulated from each other and the second plurality of strands being un-insulated from each other in order to secure electric contact is unclear.

Claim 16 lacks sufficient structure support for the functional language of “is air wound and formed without an iron core.”

Regarding claim 36, applicant should clarify what is intended by “free of partial discharge.”

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claims 1-6, 9-11, 13-33 and 36-39, as best understood in view of the rejections under 35 U.S.C. 112 first and second paragraphs, are rejected under 35 U.S.C. 103(a) as being unpatentable over Grimes et al. [US 5,455,551] in view of Elton et al. [US 4,853,565].

The prior art of figures 1 and 2 of Grimes et al. discloses a transformer with windings [14], cooling ducts [22] and ducts stick [24].

Grimes et al. discloses the instant claimed invention except for the specific cable used for the windings.

Elton et al. discloses the electrical cables [100, figure 7] configured for use with an electrical device [see column 1, lines 15-25], comprising:

- an electrically conducting core [102];
- a plurality of electrically conducting strands [see column 7, lines 17-18];
- an inner first semiconducting layer [104] surrounding and contacting the core;
- an insulating layer [106] arranged on an outside of the first semiconducting layer; and
- a second semiconducting layer [110] surrounding the insulating layer, wherein the second semiconducting layer has an equipotential surface surrounding the conductor [see column 7, lines 24-26] connected to earth potential [see column 7, lines 26-27] and is void free [see column 8, lines 3-9].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the cable of Elton et al. in Grimes et al. for the purpose of equalizing the electric potential and minimizing corona discharge.

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The claimed method steps would have been inherent in the product structure.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grimes et al. in view of Elton et al. as applied to claims 1-6 above, and further in view of Takaoka et al. [US 5,094,703].

Grimes et al. in view of Elton et al. discloses the instant claimed invention except for the specific size range of the cable.

Takaoka et al. discloses a high-voltage cable having the specific size range diameter [see column 1, lines 22-29].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the cable of Grimes et al. in view of Elton et al. to have the conductor area which is between *about* 30 and 3000 mm² and with an outer cable diameter which is between *about* 20 and 250 mm, as suggested by Takaoka et al., for the purpose of increasing power handling capacity.

Response to Arguments

9. Applicant's arguments filed 5/24/01 have been fully considered but they are not persuasive.

Applicant argues that:

[1] The specification provides a description of the flexible cable and figures 2 and 3.

[2] The term "substantially" is believed not to be relative but simply "recites that the standard is such that defects and cracks or the like do not arise in the boundary layer between the

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semiconducting layers.” One of ordinary skill in the art could readily ascertain what is meant by the term “substantially.”

[3] It is believed that the term “partial discharge” has been described in the specification.

[4] Grimes et al. discloses a low voltage conventional transformer. Applicant means by low voltage “on the order of 10 kV.” The present invention is designed for much higher voltages.

[5] The present invention is designed for operation without additional insulation outside the winding. Insulation outside the winding and a cooling liquid are not required.

[6] One of ordinary skill in the art would not employ the arrangement of Elton et al. in Grimes et al. to equalize electrical potential and minimize corona discharge because there is no motivation to make the substitution.

[7] The cable shown in figure 7 of Elton et al. is not necessarily for use as a winding in a transformer.

[8] Takaoka et al.’s invention has the same structure of the outer strands being un-insulated but for a different purpose than applicant’s claimed invention.

[9] Takaoka et al. does not disclose the cable for use as a transformer winding.

[10] The declaration of Mr. Linsey assert that it would not have been obvious to a transformer expert to employ the cable of Elton et al. in a transformer of Grimes et al., nor would it be obvious to employ the feature of Takaoka et al. as well.

[11] The declaration of Mr. Torben Aabo assert that the cable of Elton et al. is suitable for power distribution and transmission, and not as a machine winding.

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The EXAMINER fully disagrees.

Regarding [1], figure 3, does not show the flexible. Applicant has not pointed out, nor has the specification clearly describes, the flexible cable, as claimed.

Regarding [2], applicant has not set forth any standard regarding the defects, cracks or the like of the boundary layer between the semiconducting layers.

Regarding [3], applicant has not been able to specifically point out where in the specification the term “partial discharge” has been described.

Regarding [4], applicant has disclosed that the transformer operates in voltage ranges from 3 to 4 kV [see specification page 12, lines 31-32]. Applicant acknowledges that the transformer of Grimes et al. operates at a voltage on the order of 10 kV.

Regarding [5], applicant has not precluded addition insulation or cooling liquid.

Regarding [6], Elton et al. discloses that the semiconducting layer provides electrical potential equalization and minimization of corona discharge. A skilled artisan would have been highly motivated to use Elton et al.’s cable in Grimes et al. to reduce corona discharge and provide electrical potentially equalization.

Regarding [7], Elton et al. teaches that the cable can be use in other electrical device [see column 8, line 20-25].

Regarding [8], a skilled artisan would have been highly motivated to gain the advantages of better power handling capacity, as suggested by Takaoka et al.

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Regarding [9], Takaoka et al. discloses a method for making an electrical power cable. A skilled artisan would have been motivated to use an electrical power cable in a power transformer.

Regarding [10] and [11], the declarations of Mr. Linsey and Mr. Aabo do not preclude the use of the cable of Elton et al. or Takaoka et al. for use in a power transformer.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tuyen T. Nguyen whose telephone number is (703) 308-0821.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Michael Gellner, can be reached at (703)308-1721. The fax number for this Group is (703)308-7724.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703)308-0956.

TTN



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August 8, 2001


LINCOLN DONOVAN
PRIMARY EXAMINER
GROUP 2100